

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2003-166075  
(43)Date of publication of application : 13.06.2003

(51)Int.CI.

C23C 22/46  
C23C 28/00

(21)Application number : 2001-366718  
(22)Date of filing : 30.11.2001

(71)Applicant : DIPSOL CHEM CO LTD  
(72)Inventor : OSHIMA KATSUHIDE  
TANAKA SHIGEMI  
INOUE MANABU  
YAMAMOTO TOMITAKA

**(54) TREATMENT SOLUTION FOR FORMING HEXAVALENT CHROMIUM-FREE RUST PREVENTIVE COATING ON PLATED FILM WITH ZINC AND ZINC ALLOY, HEXAVALENT CHROMIUM-FREE RUST PREVENTIVE COATING AND METHOD FOR FORMING THE SAME**

**(57)Abstract:**

**PROBLEM TO BE SOLVED:** To provide an extremely dilute treatment solution for forming extremely thin coating on a plated film of zinc and a zinc alloy, which has corrosion resistance equal to or higher than a conventional coating containing hexavalent chromium, in spite of containing no hexavalent chromium.  
**SOLUTION:** The treatment solution for forming a rust preventive trivalent chromate coating free from hexavalent chromium, includes a silicon compound, and trivalent chromium and oxalic acid of 0.5-1.5 by molar ratio, where trivalent chromium exists as a water-soluble complex with oxalic acid, and cobalt ions stably exists in the treatment solution, without precipitating through forming hardly soluble metal salts with oxalic acid. The treatment solution is characterized by forming a rust preventive trivalent chromate coating free from hexavalent chromium containing zinc, chromium, cobalt and oxalic acid, through reacting with zinc on the plated film of zinc and the zinc alloy, when being contacted with the plated film of zinc and the zinc alloy.

**LEGAL STATUS**

[Date of request for examination] 03.12.2001  
[Date of sending the examiner's decision of rejection]  
[Kind of final disposal of application other than the  
examiner's decision of rejection or application  
converted registration]  
[Date of final disposal for application]  
[Patent number] 3332374  
[Date of registration] 26.07.2002  
[Number of appeal against examiner's decision of  
rejection]  
[Date of requesting appeal against examiner's decision  
of rejection]  
[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

**EXPRESS MAIL LABEL**  
NO.: EV 481672226 US